

REMARKS

I. Status Summary

Claims 1-89 are pending in the present application. Claims 90-159 have been withdrawn as being directed to a non-elected invention. Claims 1-89 stand rejected by the U.S. Patent and Trademark Office (hereinafter the "Patent Office")

Claims 2, 3, 5, 6, 10, 11, 15, 31, 46, 50, 55, 56, 61, 71, 82, 87, and 89 have been canceled herein. Claims 1, 4, 12, 14, 22, 24, 32, 40, 42, 48, 49, 51, 54, 57, 63, 64, 72, 73, 81, 83, and 86 have been amended. Support for the amendments can be found in the application as filed. No new matter has been added. Therefore, upon entry of this Amendment, claims 1, 4, 7-9, 12-14, 16-30, 32-45, 47-49, 51-54, 57-60, 62-70, 72-81, 83-86, and 88 will be pending in the subject application.

Reconsideration of the application as amended and further in view of the remarks set forth hereinbelow is respectfully requested.

II. Response to the Rejection under 35 U.S.C. § 112, Second Paragraph

Claims 1-89 have been rejected under 35 U.S.C § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants view as the invention. In particular, the Patent Office alleges that the claims are indefinite because the metes and bounds of the following terms cannot be determined: "polyelectrolyte," "polycation," "protic acids," and "reactive anion." The Patent Office further alleges that a cationized chitosan is not a "polycation" or a "cation," but rather a "cationized polymer." The Patent Office contends that claim 10 is indefinite because it does not include a standard of measurement. With regard to claims 32 and 57, the Patent Office contends that chlorosulfonic acid is not a haloacetic acid. The Patent Office alleges that claim 42 is not properly dependent on claim 40 because it includes the process wherein no polycation is present. The Patent Office contends that claims 46 and 89 do not further limit claims 40 and 63, as claims 40 and 63 already describe pad-batch methods. The Patent Office alleges that the use of the term "treated

anionic material” is confusing in claim 63. With regard to claims 15, 50, 51, 55, 81, 83, and 87, the Patent Office contends that the halogenated-hydroxyalkyl metal alkyl halides are selected from compounds that do not comprise metals. Finally, with regard to claims 51 and 83, the Patent Office alleges that the term “reaction anion adduct” is unclear, and that there is no antecedent basis for the term “reactive anion” because the “reactive anion” is selected from a group consisting of two compounds that are not anions. See Official Action, pages 2-3.

After careful consideration of the rejections and the Patent Office's comments, applicants respectfully submit the following remarks.

Initially, with regard to the terms “polyelectrolyte” and “polycation”, applicants respectfully submit that, without acquiescing to the rejection or to the Patent Office's comments, claim 1 has been amended, removing reference to the term “polyelectrolyte” and incorporating the subject matter of claims 10 and 11. As the term “polyelectrolyte” no longer appears in the claims, applicants submit that the rejection directed to the term “polyelectrolyte” is rendered moot. The term “polycation” as used in the amended claim 1 refers to a species formed by reacting a polymer with a cationizing agent. See claim 1(a).

Claim 12 has been amended to replace the term “protic acid” with the term “carboxylic acid”. Support for the amendment can be found in the specification at page 28, line 15. Applicants respectfully submit that the meaning of the term “carboxylic acid” would be well known to one of skill in the chemical field.

With regard to the term “reactive anion”, each of claims 1, 24, 48, 63, and 64 have been amended herein to recite “a reactive anion selected from the group consisting of a haloacetic acid and an alkali metal haloalkyl sulfonate.” Support for these amendments can be found in claims 31 and 56, as well as in the specification as filed at page 14, lines 28-29, which recites that the reactive anions can be chloroacetic acid (CAA) and sodium chloromethyl sulfonate (CMSA), a exemplary haloacetic acid and alkali metal haloalkyl sulfonate, respectively.

Applicants respectfully submit that the Patent Office's comments with regard to “cationized chitosan” appear to be directed to claim 23, which describes cationized

chitosan as a polycation. Applicants note that claim 23 depends from claim 12, which describes a process for reacting a polymer with a cationizing agent to form a polycation. Applicants respectfully submit that a cationized polymeric material, such as chitosan or cellulose, which has been treated with a cationizing agent is rendered cationic in nature. See Specification at page 3, lines 21-24. For example, Reaction (III) of Scheme 1, (see Specification, page 4) shows an oxyanion of cellulose reacting with the epoxy group of a cationizing agent, epoxypentyl trimethyl ammonium chloride (EPTAC), to form a covalent linkage, leaving the derivatized cellulose with a terminal trimethyl ammonium cation. A similar reaction is available to chitosan through the reaction of oxyanions of the chitosan C6 and ring hydroxyl groups. See Specification at page 10, lines 9-10. Thus, a "cationized chitosan" comprises cations.

With regard to wrinkle recovery angle measurements, applicants respectfully submit that, as described hereinabove, the subject matter of claim 10 has been incorporated into claim 1, and claim 10 has been canceled. Additionally, claim 1 has been amended to recite that the improved wrinkle recovery angle of the ionic crosslinked fibrous material is compared to non-crosslinked fibrous material. Support for this amendment can be found in the specification at page 32, lines 6-7, which recites that the ionic crosslinking treatments produced "significant WRA improvements." Supporting data is shown in the specification at Table 1, page 31, wherein measurements for non-crosslinked fibrous material (*i.e.*, material not treated with the cationized chitosan) are shown in the second column from the left. The method of testing wrinkle recovery angle is described as the American Association of Textile Chemists and Colorists (AATCC) Standard Test Method 66, Wrinkle Recovery of Fabrics: Recovery Angle Method. See Specification, page 30, lines 13-15.

With respect to the rejections based on the Patent Office's contention that chlorosulfonic acid is not a haloacetic acid, applicants respectfully submit that claims 32 and 57 have been amended herein to remove the words "chlorosulfonic acid."

Regarding the alleged improper dependency of claim 42, applicants respectfully submit that claim 42 has been amended to remove the possibility of 0% polycation and recites a weight percent concentration of the polycation "of to about 6%."

With regard to claims 46 and 89 not further defining the limits of claims 40 and 63, applicants respectfully submit that claims 46 and 89 have been canceled.

Applicants respectfully submit that the term "treated anionic fibrous material" in claim 63 is used to refer to the product of step (c), which is an anionic fibrous material that has been padded through a first reaction mixture, which as described in step (b) of claim 63, contains a cationizing agent mixed with an alkaline compound. The "treated anionic fibrous material," thus refers to anionic fibrous material wetted with the first reaction mixture. Because the cationizing agent is already in a mixture with an alkaline compound, its ability to react covalently with the anion (*i.e.*, the carboxylate or sulfonate) of the anionic fibrous material has been reduced, for example, by a reaction such as shown in the specification in Reaction II, wherein the nucleophilic epoxide of EPTAC is hydrolyzed by hydroxide. See Specification, page 4. Therefore, the anionic charge of the anionic fibrous material is still present. During batching step 63(d), ionic crosslinks are formed between the anionic groups on the fibrous material and the cations (*i.e.*, the quaternary amines) of the cationizing agent, leaving a neutralized material.

Regarding the rejections based on terms in claims 51 and 83, applicants respectfully submit that claims 51 and 83 have been amended to recite "an adduct of the reactive anion," which applicants believe would be readily understood by one of skill in the art. Further, claims 51 and 83 are dependent on claims 48 and 63, respectively. Claims 48(b) and 63(a) both describe a "reactive anion selected from the group consisting of a haloacetic acid and an alkali metal haloalkyl sulfonate." Accordingly, applicants submit that the term "reactive anion" in claims 51 and 83 has antecedent basis in claims 48 and 63.

The Patent Office has also rejected claims 51 and 83, along with claims 15, 50, 55, 81, and 87, for using the term "halogenated-hydroxyalkyl metal alkyl halide" to refer to compounds that do not comprise metals. Applicants note that this term also appears in claims 82 and 83, while claims 86 and 87 refer to an "epoxyalkyl metal alkyl halide." Applicants respectfully submit that claims 15, 50, 55, 82, and 87 have been canceled. Claims 51 and 83 have been amended to remove the term "halogenated-hydroxyalkyl metal alkyl halide." Claim 81 has been amended to remove the term "halogenated-

hydroxyalkyl metal alkyl halide” and to incorporate the specific cationizing agent, 3-chloro-2-hydroxypropyl trimethyl ammonium chloride, recited in canceled claim 82. Similarly, claim 86 has been amended to remove the term “epoxyalkyl metal alkyl halide” and to incorporate the specific cationizing agent of canceled claim 87, epoxypropyl trimethyl ammonium chloride.

Finally, the Patent Office has also rejected the claims for their use of the term “reactive anion” referring to chloroacetic acid (CAA) and chlorosulfonic acid. As described hereinabove, claims 51 and 83 are dependent from claims 48 and 63, respectively, which describe reactive anions selected from the group consisting of a haloacetic acid and an alkali metal haloalkyl sulfonate. Claims 51 and 83 have been amended replacing chlorosulfonic acid with sodium chloromethyl sulfonate (CMSA) in keeping with the use of the term alkali metal haloalkyl sulfonate in claims 48 and 63. As described hereinabove, support for CMSA as a reactive anion can be found in the specification at page 14, lines 28-29. Applicants also note that an alkali metal haloalkyl sulfonate generally represents an anion formed from a halosulfonic acid, such as a chlorosulfonic acid. Applicants further submit that it is well known in the art that both types of acids, acetic acids and sulfonic acids, are readily ionizable to their respective ionized acetate and sulfonate species, and that at a neutral pH, both acids would be present in their ionized form. In particular, with respect to CAA, the specification, describing the preparation of anionic cellulose by the reaction of cellulose with CAA, shows the ionized acid (*i.e.*, $\text{ClCH}_2\text{COO}^-$). See Specification, page 17, Scheme 2. Thus, applicants respectfully submit that the use of the term “reactive anion” to refer to CAA and CMSA would be readily understood by one of skill in the art in light of the specification.

Accordingly, applicants respectfully request that the rejection of claims 1, 4, 7-9, 12-14, 16-30, 32-45, 47-49, 51-54, 57-60, 62-70, 72-81, 83-86, and 88 under 35 U.S.C. § 112, second paragraph, be withdrawn and that the claims be allowed at this time.

III. Responses to the Rejections under 35 U.S.C. § 102

III.A Response to the Rejection under 35 U.S.C. § 102(b) over Cooper

Claims 1-3 and 5-11 have been rejected under 35 U.S.C. § 102(b) upon the contention that the claims are anticipated by U.S. Patent No. 5,951,719 to Cooper et al. (hereinafter "Cooper"). The Patent Office contends that Cooper teaches applying cationic polymers (*i.e.*, glyoxalated acrylamide polymers) to anionic textile materials, such as cotton. The Patent Office further contends that Cooper teaches the formation of a cationic polymer as described in step (a) of claim 11. Finally, the Patent Office contends that Cooper teaches coating a textile with an anionic polymer, drying the coated polymer, and then coating the anionic, polymer-coated fabric with a cationic polymer. See Official Action, page 4.

After careful consideration of the rejection and the Patent Office's comments, applicants respectfully traverse the rejection and submit the following remarks.

Initially, applicants respectfully submit that, without acquiescing to the rejection or to the Patent Office's comments, claims 2, 3, 5, 6, 10, and 11 have been canceled. Thus, the rejection with regard to claims 2, 3, 5, 6, 10, and 11 is rendered moot. Applicants note that claim 1 has been amended herein, incorporating the subject matter of canceled claims 10 and 11. Claim 12 has been amended to depend from claim 1.

Regarding claim 1, applicants respectfully submit that Cooper does not teach reacting a polymer with a cationizing agent to form a polycation as is described in claim 1(a). Rather, Cooper describes the use of cationic glyoxlyated acrylamide polymers, wherein the cationic groups are added during the synthesis of the polymer via copolymerization of cationic monomers, such as diallyldimethyl ammonium chloride, with acrylamide monomers. See Cooper, column 2, lines 44-55, and column 2, lines 66-67. Additionally, Cooper does not describe reacting a fibrous material with a reactive anion selected from a haloacetic acid and an alkali metal haloalkyl sulfonate to form an anionic fibrous material, as described in claim 1(b). Instead, Cooper teaches coating fabric with an anionic polymer solution and drying it to form an anionic polymer-coated fabric. See Cooper, column 3, lines 65-67.

Accordingly, applicants submit that Cooper does not teach each and every element of claim 1. Applicants respectfully request that the rejection of claim 1 under 35 U.S.C. § 102(b) over Cooper be withdrawn, and that claim 1 be allowed at this time. As claims 7-9 depend from claim 1, claims 7-9 are also believed to be patentable over Cooper. Therefore, applicants further request the withdrawal of the rejection of claims 7-9 under 35 U.S.C. § 102(b) over Cooper and ask that claims 7-9 be allowed at this time.

III.B Response to the Rejection under 35 U.S.C. § 102(b) over Elizer

Claims 11, 12, and 16-20 have been rejected under 35 U.S.C. § 102(b) upon the allegation that the claims are anticipated by U.S. Patent No. 3,676,423 to Elizer (hereinafter "Elizer"). In particular, the Patent Office alleges that Elizer discloses the steps of claim 11 by reacting a cellulose polymer with a cationizing agent to form a cationized polymer, as in step (a) of claim 11, and reacting a fibrous material with a reactive ion to form an anionic fibrous material, as in step (b) of claim 11. The Patent Office further alleges that these two products are combined as in claim 11(c). See Official Action, bottom of page 4 thru top of page 5.

After careful consideration of the rejection and the Patent Office's comments, applicants respectfully traverse the rejection and submit the following remarks.

Initially, applicants respectfully submit that claim 11 has been canceled, thereby rendering the rejection with respect to claim 11 moot. The subject matter of claim 11 has been incorporated into claim 1.

Insofar as the rejection applies to amended claim 1, applicants respectfully submit that Elizer does not teach applying a polycation to an anionic fibrous material to form an ionic cross-linked fibrous material as described in claim 1(c). Rather, Elizer describes a single fibrous material that has been reacted to form both covalently linked anionic groups and covalently linked cationic groups on the same fibrous material. The structure of this fiber is shown in Formula (V). See Elizer, column 2, line 21. Thus, the material of Elizer comprises only a single layer (*i.e.*, the cellulose fiber), while that of

claim 1 has two layers, the fiber and the polycation formed from reacting a polymer such as chitosan with a cationizing agent as described in claim 1(a). Stated another way, each of the cations recited by Elizer as being applicable to cellulose is a monomeric compound (see Elizer, column 3, lines 13-25), not a polycation formed as described in claim 1(a) and applied to an anionic fibrous material as described in claim 1(c).

Accordingly, applicants submit that Elizer does not teach each and every element of claim 1. Applicants respectfully request that the rejection of claim 11 under 35 U.S.C. § 102(b) over Elizer, insofar as it applies to claim 1, be withdrawn. Applicants further ask that claim 1 be allowed at this time. As claims 12 and 16-20 depend from claim 1, claims 12 and 16-20 are also believed to be patentable over Elizer. Therefore, applicants also request that the rejection of claims 12 and 16-20 under 35 U.S.C. § 102(b) over Elizer be withdrawn and that claims 12 and 16-20 be allowed at this time.

III.C Response to the Rejection under 35 U.S.C. § 102(b) over Kim

Claims 1-5, 6-9, 40-42, and 45-47 are rejected under 35 U.S.C. § 102(b) upon the contention that the claims are anticipated by Kim et al. (*Textile Res. J.*, 68(6), 428-434 (1998); hereinafter "Kim"). The Patent Office contends that Kim teaches the formation of cationic chitosan by reacting chitosan with glycidyltrimethylammonium chloride and treating cotton with the cationized chitosan. See Official Action, page 5.

Initially, applicants respectfully submit that, without acquiescing to the rejection or to the Patent Office's comments, claims 2, 3, 5, 6, and 46 have been canceled herein. Thus, the rejection with regard to claims 2, 3, 5, 6, and 46 is moot.

Further, applicants respectfully submit that claims 4, 7-9, 40-42, 45, and 47 all ultimately depend or have been amended to ultimately depend from claim 1 and contain all of the elements of claim 1. Therefore, each of claims 4, 7-9, 40-42, 45, and 47 is directed to an ionic crosslinked fibrous material comprising an anionic fibrous material as described in claim 1(b), which was formed by reacting a fibrous material with a reactive anion selected from the group consisting of a haloacetic acid and an alkali metal haloalkyl sulfonate. Thus, the anionic fibrous material of the presently rejected

claims comprises a treated material having anionic carboxylate or sulfonate groups. As conceded by the Patent Office, Kim does not treat cotton to further increase its anionic charge. See Official Action, page 6.

Additionally, applicants respectfully submit that claim 1(a) recites that the polycation is formed by reacting a polymer with an aqueous alkaline solution and a cationizing agent. Support for this amendment can be found in claim 12. Kim describes a cationized chitosan formed by reacting a polymer (*i.e.*, chitosan) with a cationizing agent only. See Kim, page 428. This leads to a chitosan cationized only at the chitosan NH₂ groups. See Kim, page 430, Figure 1. By including an alkaline solution in the cationizing process of claim 1(a), the polycation of the presently disclosed subject matter can be cationized more extensively. For example, when chitosan is used as the polymer in the process of claim 1(a), the chitosan C6 and ring hydroxyl sites are substituted by the cationizing agent, providing a more reactive polycation. See Specification, page 10, lines 9-10 and page 3, lines 9-20.

Accordingly, applicants respectfully submit that Kim does not teach each and every element of claim 1 or dependent claims 4, 7-9, 40-42, 45, and 47. Therefore, applicants respectfully request that the rejection of claims 1, 4, 7-9, 40-42, 45, and 47 under 35 U.S.C. § 102(b) over Kim be withdrawn. Applicants also ask that claims 1, 4, 7-9, 40-42, 45, and 47 be allowed at this time.

III.D Response to the Rejection under 35 U.S.C. § 102(b) over Perrier

Claims 1, 2, 5, and 7-10 are rejected under 35 U.S.C. § 102(b) upon the contention that the claims are anticipated by U.S. Patent No. 4,067,689 to Perrier et al. (hereinafter "Perrier"). The Patent Office contends that Perrier teaches treating an anionic fibrous material (*i.e.*, cotton) with a polycation to form a crosslinked cotton having improved wet and dry recovery angles. See Official Action, page 6.

Without acquiescing to the rejection, or to the Patent Office's comments, applicants respectfully submit that claims 2, 5, and 10 have been canceled herein. Thus, the rejection of claims 2, 5, and 10 is rendered moot.

Further, applicants respectfully submit that Perrier teaches a process for forming crosslinked cellulose, wherein the cellulose starting material is amino-functionalized, comprising tertiary amines (*i.e.*, diethylaminoethyl groups). This amino-modified cellulose is treated with a dihaloalkane resulting in a fiber containing crosslinks formed with covalent bonds, each covalent crosslink also comprising two cationic quaternary amines. See Perrier, column 2, Equation 1. The crosslinking of Perrier does not involve ionic crosslinking between a cation and an anionic group, such as a carboxylate or a sulfonate, as in claim 1. In particular, applicants respectfully submit that the fibrous material of Perrier is not reacted with a reactive anion selected from the group consisting of a haloacetic acid and an alkali metal haloalkyl sulfonate as recited in claim 1(b), nor is a polycation applied to an anionic fibrous material as recited in claim 1(c).

Accordingly, the applicants respectfully submit that Perrier does not teach each and every element of claim 1, and, thus, does not teach each and every element of claims 7-9, which depend from claim 1. Therefore, applicants respectfully ask that the rejection of claims 1 and 7-9 under 35 U.S.C. § 102(b) over Perrier be withdrawn and that claims 1 and 7-9 be allowed at this time.

IV. Response to the Rejection under 35 U.S.C. § 103(a) over Kim
in view of Login

Claims 1-11 and 40 are rejected under 35 U.S.C. § 103(a) upon the contention that the claims are obvious over Kim in view of U.S. Patent No. 6,336,943 to Login et al. (hereinafter "Login"). In particular, the Patent Office alleges that Kim discloses the formation of cationized chitosan, but concedes that while Kim teaches cationized chitosan for use in treating cotton, Kim does not teach using cotton that has been reacted to have a permanent anionic charge. The Patent Office alleges that Login teaches a method of derivatizing cotton so that it exhibits a permanent anionic charge. The Patent Office further alleges that it would be obvious to use the anionic derivatized cotton of Login with the cationic chitosan of Kim because Kim notes that the cationic chitosan lacks laundry durability on cotton while Login teaches that the anionic

derivatized cotton increases the amount of cationic softener or biocide that can be absorbed on the cotton. The Patent Office concludes that a chemist would appreciate that ionic bonding would improve the bonding or holding power of the cationic chitosan to cotton. See Official Action, page 6.

After careful consideration of the rejection and the Patent Office's comments, applicants respectfully traverse the rejection and offer the following remarks.

Initially, applicants respectfully submit that claims 2, 3, 5, 6, 10, and 11 have been canceled herein, thereby rendering the rejection with regard to claims 2, 3, 5, 6, 10, and 11 moot.

Further, applicants respectfully note that with regard to rejections under 35 U.S.C. § 103, the Patent Office bears the initial burden of factually supporting a *prima facie* conclusion of obviousness. See Manual of Patent Examining Procedure (hereinafter "MPEP") § 2142. To establish a *prima facie* case of obviousness, the Patent Office must meet the following criteria. See MPEP § 2143. First, there must be some suggestion or motivation, either in the reference itself or the knowledge generally available to one of ordinary skill in the art, to modify the reference. Id. Second, there must be a reasonable expectation of success. Id. Third, the prior art reference must teach or suggest all of the claim elements. Id. In view of all of the factual information, the Patent Office must then make a determination whether the claimed subject matter "as a whole" would have been obvious at that time to that person. See MPEP § 2142. Impermissible hindsight must be avoided and the legal conclusion of obviousness must be reached on the basis of the facts gleaned from the prior art. Id. The fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness. See MPEP § 2143.01. Said another way, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See Id. (citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)).

Applicants also note that the proposed modification cannot render the prior art unsatisfactory for its intended purpose. See MPEP § 2143.01. If the proposed modification would render the prior art invention being modified unsatisfactory for its

intended purpose, then there is no suggestion or motivation to make the proposed modification. Id. (citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)). Further, the proposed modification cannot change the principle of operation of a reference. Id. Accordingly, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Id. (citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)).

With regard to Kim, applicants note that, as described hereinabove in Section III.C, the cationized chitosan of Kim is not formed according to the process of claim 1(a), wherein a polymer is reacted with an aqueous alkaline solution and a cationizing agent. Applicants also submit that Kim, in general, relates to providing an antimicrobial finish to cotton, not to providing fabric with “improved wrinkle recovery angle without a loss of strength” as described by the presently disclosed subject matter. See Specification, page 5, lines 9-10. While Kim notes that the water solubility of cationized chitosan limits its durability, Kim also appears to solve this problem by applying a nonionic binder, “which considerably improves laundering durability.” See Kim, page 433, right-hand column, lines 20-21. Further, because the cationic groups are critical to the antimicrobial nature of the treated cotton, neutralizing the cationic charge by forming an ionic crosslinked fibrous material as described in claim 1(c) would eliminate the antimicrobial properties of the treated cotton.

With regard to Login, applicants note that, generally, the anionic charge of Login is created by reacting cotton with ammonium sulfamate. As noted in claim 1(b), the anionic charges of the presently disclosed anionic fabric is produced by reaction with a haloacetic acid or an alkali metal haloalkyl sulfonate.

Further, applicants note that Login, as a whole, is directed to processes for making fabrics more aesthetically pleasing and more resistant to staining by anionic dyes. See Login, abstract. In order to repel the anionic dyes, repulsion of the anionic charges on the cotton are essential. With respect to other fiber characteristics, Login describes:

Anionic cotton will afford garments with greater loft and better smoothing properties (anti-wrinkling). This is because of charge repulsion. With anionic groups, charge repulsion can be a significant force pushing the like charges to repel each other and achieving a farthest separation possible between the fibers resulting in a smoother fabric.

See Login, column 4, lines 15-20. Thus, as related to the specific goal of the presently disclosed subject matter, anti-wrinkling, Login appears to teach that free anionic charges on cotton are critical. Therefore, despite describing that the anionic charges can attract cationic agents such as softeners and bacteriocides, Login appears to teach away from any exhaustive treatment that would neutralize anionic charges, such as applying a polycation to the anionic fibrous material to form an ionic crosslinked fibrous material, when wrinkle reduction is intended.

Thus, applicants respectfully assert that the Patent Office has not made a *prima facie* case of obviousness, as Kim and Login, either alone or in combination, do not teach or suggest the ionic crosslinked fiber of claim 1, particularly with regard to the success of such a fiber in attaining wrinkle reduction. First, Kim and Login, either alone or in combination, do not provide each and every element of claim 1. Further, the Patent Office's statement that one of skill in the art would understand that ionic bonding would improve the bonding of cationic chitosan to anionic cotton does not provide the requisite motivation of the desirability to do so. This motivation is provided by the subject application, which describes the improved characteristics of the ionic crosslinked fibrous material. Therefore, applicants respectfully submit that the present rejection amounts to the use of improper hindsight reasoning. Additionally, combining the anionic cotton of Login with the cationic chitosan of Kim would alter the principle of operation of both teachings, as Kim relies on a cationic charge to repel microbial adhesion, while Login specifically describes that repulsion between anionic charges can be used to improve smoothness.

Thus, in view of the Remarks provided hereinabove, applicants respectfully submit that the Patent Office has not established a *prima facie* case of obviousness and respectfully request that the Patent Office's rejection of claim 1 under 35 U.S.C. § 103(a) in view of Kim and Login be withdrawn and that claim 1 be allowed at this time.

Applicants further note that if an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Applicants therefore respectfully request that the rejection of claims 4, 7-9, and 40 under 35 U.S.C. § 103(a) be withdrawn and that claims 4, 7-9, and 40 be allowed at this time.

CONCLUSIONS

Should there be any minor issues outstanding in this matter, the Examiner is respectfully requested to telephone the undersigned attorney. Early passage of the subject application to issue is earnestly solicited.

DEPOSIT ACCOUNT

The Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS, WILSON, TAYLOR, & HUNT, P.A.

Date: 6-21-06

By: Richard E. Jenkins
Richard E. Jenkins
Registration No. 28,428

REJ/AO/gwc

297/201

Customer No: 25297